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ABSTRACT

A study was made to ascertain the achievement of Hmong refugee children attending elementary school in the Fresno Unified School District (FUSD) and to examine relationships of classroom factors and school resource program characteristics to Hmong student achievement. A total of 237 students from 136 first through sixth grade classrooms participated in the study. Measures used to assess students' educational performance included the 1977 California Achievement Tests (CAT) and the Hmong Student Impact Survey (HSIS). Other data were collected regarding students' classrooms and school resource programs. Findings indicate that Hmong refugee children bring important strengths to their new school environments. The social-emotional traits they possess not only facilitate learning and school adjustment, but are also conducive to favorable teacher attitudes. In curriculum areas requiring little proficiency in English, HSIS teacher ratings indicate that Hmong students' achievement is similar to their classmates'. Both HSIS and CAT results indicate that the oral and written language skills of Hmong students require attention. Programs stressing small group instruction and providing individualized attention seem to be most beneficial to reading achievement among the Hmong. While the use of primary language tutors representing home culture has intuitive appeal, this study found no evidence to support this use. (RH)

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Achievement of Southeast Asian Students and its Relation to School Resource Program

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Background

Escaping war and unrest in their homelands, Southeast Asian refugees have immigrated to the United States in record numbers. More than 228,000 Southeast Asians currently reside in California. Over the last five years, the Southeast Asian population in Fresno County, California has grown dramatically from a few thousand to approximately18,000. This exponential growth has been due to "secondary migration" of Southeast Asian refugees (McInnis, 1981) from other states and other California localities. While including Southeast Asians of diverse ethnic backgrounds, the largest group represented in Fresno is the Hmong. Fresno has the greatest concentration of Hmong refugees in the United States. As in other U.S. cities, resettlement of large numbers of refugees has proved a severe test of area agencies' ability to allocate needed services in a rapid and efficent manner (Richardson, 1982).

Like all new immigrants, Southeast Asian refugees have had to confront problems with language, employment, housing, and health, to cope with differences in food and climate, and to make drastic lifestyle changes in adapting to life in America. Education is of fundemental importance to

successful adjustment, especially for school-aged children who comprise almost 45% of Southeast Asian refugees (Goor, 1980).

Public schools across the United States are faced with the challenge of providing Southeast Asian refugee students, along with the regular program of studies, intensive English instruction and exposure to American cultural practices and values (Liff, 1980). At the same time, schools need to remain sensitive to the unique cultural heritage of Southeast Asians. To assure students' success, potential areas of conflict between American and Southeast Asian value systems must be addressed (Alley, 1980, Chan, 1981; Ellis, 1980; Mackey, 1982; Madrid, 1980; Peterson, 1983).

In response to the heavy influx of Southeast Asian students, many schools have hastily organized "ESL" (English as a Second Language) resource programs (Garton, 1982; Mackey, 1982; Peterson, 1983; Weslander & Stephany, 1983). These programs vary in approach. Some offer special instruction on a "pull-out" basis (students leave their regular classrooms for period of time). Another type is designed to replace the entire instructional program. A final approach is to provide help within the regular classroom. Many school systems have been hard-pressed to

find skilled staff for these programs (Madrid, 1980). A strategy used by some districts is to employ Southeast Asian adults of varying qualifications as teaching assistants and community liasons (Garton,1982; King, 1981).

Cultural and language differences make evaluation of educational progress difficult. Little is known about factors contributing to successful adjustment of Southeast Asian refugee children to school setting. Design of school resource programs which can best effect students' English acquisition and remediate skill deficits is open to question.

Research on Southeast Asian students was found to be sparse. Ellis (1980) questioned 49 California administrators and professionals providing services to Vietnamese, Cambodian and Laotian refugee children and families. Sixteen respondents in the sample were Indochinese. Queried concerning children's school adjustment, 86% of respondents reported that children were experiencing "good success" in school. Reasons cited by respondents for this success included hard work, discipline, motivation, infrequent participation in extracurricular activities, parental pressure to maintain family honor, and supportive public school teachers. Aspects of schooling viewed by respondents as creating problems for refugee

students involved incorrect grade placement, general confusion about U.S. educational system, and lack of previous school records.

King (1981) conducted a study of Mexican-American, Vietnamese, and Hmong students in 7 Denver public schools. Teachers rated their students in the areas of oral language, reading skill and emotional behavior. In oral language and reading skill, Hmong students were rated as below grade level, 53 % and 77% respectively. However, in emotional behavior, the majority of Hmong students, 73%, were rated at grade level or above. According to classroom teachers, daily work with a bilingual tutor or aide or ESL teacher was considered to be the most crucial factor in effective teaching of ethnically diverse children.

An evaluation of ESL programs in Des Moines, Iowa, public schools was made by Weslander and Stephany (1983). Included in the study were 577 Southeast Asian students in Grades 2 through 10. Teachers were asked to rate students on progress in learning English. The Bilingual Syntax Measure (BSM) was administered to assess oral English proficiency. Length of time in the school district was found to be the best predictor of BSM performance. However, an interaction effect between amount of English

instruction and length of time in the district tended to indicate that ESL instruction was most beneficial during the first year of schooling. Efficacy of the ESL program appeared to diminish progressively during the second and third year.

The purpose of this study was to ascertain achievement of Hmong elementary school children, grade 1 through grade 6, in the Fresno Unified School District (FUSD). A second objective was to examine relationships of classroom factors and school resource program characteristics to Hmong student achievement.

Method

Subjects. Approximate total enrollment of Hmong students in FUSD as of January,1983 was 1,707. Of this population,1,207 were elementary school students. All elementary schools within FSUD having at least 10 Hmong students enrolled were identified. From these schools, a random sample of Hmong students stratified by school and grade level were selected.

A total of 237 students from 136 classrooms, grades 1 through 6, in 16 schools composed the study sample. This sample consisted of 108 boys

and129 girls.

Measures. Both informal and standard measures of achievement were utilized to assess educational performance: California Achievement Tests (CAT) (1977) and Hmong Student Impact Survey (HSIS).

The CAT, a group-administered, norm-referenced battery in the areas of reading, language and mathematics, appropriate for grades 1.5 to 12, was selected as a standard achievement measure. Problems in using standardized tests with culturally and and linguistically different students have been well-documented (Wargo, & Green, 1977). However, for purposes of the present study, the CAT offered some important strengths. It has superior reliability and has been carefully developed to reflect a wide range of skills in each battery area. CAT results can be translated into a equal interval scale score for each battery, as well as total CAT performance, allowing for intergrade comparisons.

To overcome limitations of using CAT with culturally different students, the HSIS, a comparative rating scale, was designed to gather additional information from teachers about educational progress of Hmong students. The HSIS contained 27 items for rating students in the following

categories: (a) Social-Emotional Development: (b) Language Arts; (c) Mathematics; (d) Art, Music, and Physical Education; and (e) Parent Involvement. HSIS items were developed in consultation with resource teachers and were intended to reflect performance areas on report cards and progress reports used in schools as well as other achievement-related behaviors.

The HSIS asked teachers to rate an identified Hmong student on each performance item in comparison to his or her non-Hmong classmates. A scale of 1 to 5 was utilized. Ratings were as follows: "1" indicated that the Hmong student was "poor" in comparison; a rating of "2", "below average"; rating of "3", "average"; rating of "4", "above average"; and rating of "5", "superior".

While not without shortcomings (Ary et al.,1979; Good et al., 1969), teacher ratings presented an "ecologically valid" picture of student performance, especially in the case of culturally different students. That is, by utilizing classroom peers as a reference group, results of HSIS suggested teachers' perceptions of Hmong students' ability to function and to compete in their own classrooms.

Other data were collected regarding student's classroom and school resource program. Classroom variables included: grade level, teacher's years of experience, and number of Hmong students. Resource program variables included: number of Hmong students in school qualified for ESL assistance, instructional group size per class period (1-5, 5-10, over 10 students), frequency of instruction (daily,1-30 minutes; daily, 30 minutes to 1 hour; daily, 1 hour or more; not a daily program), type of resource program personnel (credentialed teacher, primary language tutor, instructional aide) and total number of resource program personnel. Information on school support services and resources (inservice, materials) available to classroom teachers was also obtained.

Procedure. Both HSIS and CAT were completed in April 1983. HSIS questionnaires were distributed and collected by a designated resource teacher or school administrator who explained rating procedure. The CAT was administered to students during the regular Spring testing program.

Results

Additional data on students in sample were contributed by HSIS results. Of 237 Hmong students, there were 44 first graders, 53 second

graders, 43 third graders, 39 fourth graders, 32 fifth graders and 27 sixth graders whom teachers rated on HSIS. Of the sample, 79.3% of Hmong students had been in classroom for entire year, 13.9% had entered mid-year, and 2.1% were new arrivals. Stability of sample and its current school experience was thus assured. Only 13.9% of sample students had not attended school during previous year or had unknown school background. Only19 or 8% of sample were being considered for retention. However, teachers described 63 students or 26.6% as appearing placed in grade not consistent with chronological age.

HSIS yielded data describing classrooms in study. Included in study were 24 first grades, 28 second grades, 23 third grades, 23 fourth grades, 20 fifth grades and 18 sixth grades. Sixty-eight percent of teachers completing HSIS had 10 or more years of experience in classroom teaching. Number of Hmong students in class ranged from 1 to 15 with a mean of 6.35 students per classroom.

Table 1 shows mean HSIS scores for Hmong students in the sample. Teacher ratings of Hmong students on HSIS indicated that the strongest area of performance for Hmong students as a group was related to their

social-emotional development. Items on which students were given especially positive ratings in comparison to classroom peers were: Respects Property (4.02), Desire to Learn (4.05), and Task Persistence (3.92). Hmong students were judged in average range by teachers on all items in Mathematics category (2.70-3.58). Artistic ability (3.75) and physical skills (3.46) were also rated favorably. As would be expected, Hmong students were rated lowest on items in the Language Arts category (2.64-3.11). Items in Parent Involvement category suggestive of an active parental role at school, such as "participates or assists in classroom activities" (1.99) were given relatively low ratings. However, on items reflecting indirect involvement, such as "complies with school requests for information" (3.50) and "demonstrates concern by regularity of child's school attendance" (4.06), Hmong students' parents were rated highly. Overall, Hmong students achieved a mean rating of 3.35 on total HSIS performance. This finding indicated that Hmong students, as a group were making average progress in relation to their non-Hmong classroom peers as assessed by teachers' HSIS ratings.

Insert Table 1 about here

Support for validity of HSIS was obtained by intercorrelating HSIS ratings of Hmong students with their CAT scale scores. Table 2 reports intercorrelations of HSIS category mean ratings and CAT area mean scale scores at each grade level. Positive associations were established for majority of HSIS categories and CAT areas, with many correlations reaching the .001 level of significance.

Insert Table 2 about here

Strong intercorrelations of HSIS performance in Social-Emotional, Language Arts and Mathematics categories with CAT areas were found at most grade levels. Ratings for categories of Art, Music and Physical Education and Parent Involvement did not appear to be highly related to

CAT performance. Correlations between HSIS Total and CAT Battery ranged from .23 at grade 4 to .68 at grade 6.

CAT results for Hmong students reveal areas of strength and weakness when compared to mean scores of standardization sample. Table 3 displays mean and standard deviations of CAT Reading, Language, Mathematics and Total Battery scale scores for Hmong students and those of the CAT norming sample for each grade level.

Utilizing a t-test procedure, differences between performances of the two groups were analyzed. At each grade level, significant differences between mean scale scores of Hmong students and the norming sample were found for Reading, Language, and Total CAT performances. However, no significant differences emerged in CAT Mathematics performance between Hmong students and norming sample at any grade level ($p > .05$).

Insert Table 3 about here

In order to study correlational relationships of variables at school

level with Hmong student achievement, mean aggregate scores for each school were derived. Without exception, there was a negative association between number of Hmong students qualified for ESL in a school and school aggregate mean HSIS scores (16 of the 27 negative correlations were significant at the .05 level or better).

As Table 4 demonstrates, this finding tended to be confirmed when number of ESL Hmong students in school was correlated with school aggregate CAT scale scores adjusted for grade level. A similar trend appeared for classroom aggregate scores as related to number of Hmong students in class.

Insert Table 4 about here

To explore further differences in CAT achievement, schools were grouped according to percentages of ESL Hmong students in school population (less than 10% ,11%-29%, 30% or more). When analysis of covariance adjusting for grade level was performed, only aggregated CAT

Reading scale scores were significantly related to schools grouped by percentage of Hmong students ($F=5.09$, $p < .025$). Table 5 shows results of this analysis.

Insert Table 5 about here

Possible associations between as school's,resource program characteristics and Hmong student achievement were also analyzed. With the effect of number of Hmong students in the school held constant, there was no significant correlation of number of resource program personnel with CAT or HSIS results. No significant correlation was found between types of resource program personnel--credentialed teacher, aides, or primary language tutor (adult refugee aide)--and HSIS or CAT perfomance. Presence of primary language tutor did not significantly relate to CAT scores or ratings on HSIS including Parent Involvement items.

Although frequency of instruction was nonsignificant, resource program instructional group size emerged as an important, positive factor

associated with HSIS Language Arts score and School Aggregate CAT Reading score ($F=6.37$, $p < .015$). Table 6 reports analysis of covariance of school aggregate CAT Reading scale scores adjusted for grade level by resource program instructional group size.

Insert Table 6 about here

Educational Importance

Many educational experts assume that culturally different students suffer from disadvantage and deficits when they enter the mainstream of public education. Findings of this study indicate that Hmong students bring important strengths to their new school environment. The social-emotional traits they possess not only facilitate learning and school adjustment, but are also conducive to favorable attitudes on the part of teachers. In areas of curriculum in which English language proficiency demands are not as great, such as mathematics, art, and physical education, teacher ratings indicate that Hmong students are already achieving at levels comparable to

their classmates. According to HSIS results, Hmong students, as a group, seem to be making average overall progress in relation to non-Hmong classroom peers. These findings are consistent with those of an earlier study (Abramson & Lindberg, 1982). As measured by a standardized test, mathematics achievement of Hmong students in this study is not significantly different from average performance of the norming sample. Oral and written language skills of Hmong students require attention. Both HSIS and CAT results point to below average performance in these areas.

This study addresses type of school resource program related to greatest achievement of Hmong students. Programs stressing small group instruction in which individualized attention can be given seem to be most beneficial to reading achievement of Hmong students. A possible implication is that funding for resource programs might be spent most effectively on reducing the teacher-pupil ratio.

While the use of primary language tutors who represent home culture has intuitive appeal, this study finds no evidence to support their value in terms of student achievement or greater parent involvement. Several

possible explanations may be forwarded to explain this lack of significant findings. Of course, measures used may have failed to detect important relationships. For many tutors, this was their first year of employment in this capacity. As familiarity with school program and expectations grow, their effectiveness may be enhanced. Finally, it is suggested that apart from benefits to students, primary language tutors make important contributions to school personnels' general understanding and sensitivity to the cultural milieu of Southeast Asian refugee students.

Reading achievement of Hmong students appears to be negatively related to heavy enrollment of Southeast Asian refugees in a school. When enrollment exceeds 30%, a school may have difficulty in allocating needed resources. The sheer volume of ESL Hmong students may impede delivery of appropriate services. Instructional group size within the resource program may necessarily be increased to accomodate ESL students. Although more resource personnel may be hired, their numbers alone are not associated with better school achievement as suggested by teacher ratings or standardized test results. These findings suggest that severely

impacted school districts should consider plans whereby Southeast Asian refugee students can be placed in many integrated settings with adequate and appropriate resources for their education.

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Table 1

Mean HSIS Ratings of Hmong Elementary Students

Survey Category	Item	Score
Social-Emotional	Emotional Adjustment	3.42
	Positive Self-Concept	3.32
	Appears Happy	3.52
	Interacts Well with Classmates	3.34
	Respects Property	4.02
	Desire to Learn	4.05
	Task Persistence	3.92
	Category Subtotal	3.66
Language Arts	Ease in Learning to Understand English	3.11
	Ease in Learning to Speak English	2.92
	Reading:Word Recognition Skills	2.94

(table continues)

Survey Category	Item	Score
	Reading: Comprehension Skills	2.69
	Writing Skills	2.64
	Category Subtotal	2.85
Mathematics	Number Concepts	3.50
	Geometry Concepts	3.16
	Money Concepts	3.13
	Computational Skills	3.58
	Problem-Solving Ability	2.70
	Category Subtotal	3.22
Art, Music and	Quality of Art Work	3.75
Physical Education	Creativity	3.63

(table continues)

Survey Category	Item	Score
	Musical Ability	2.98
	Fine Motor Coordination	3.53
	Large Muscle Coordination	3.46
	Category Subtotal	3.47
Parent Involvement	Attends Conferences and Meetings	2.86
	Assists in Classroom Activities	1.99
	Shows Interest in School Programs	2.63
	Complies With Requests for Information	3.50
	Demonstrates Concern by Regularity of Child's School Attendance	4.06
	Category Subtotal	2.99
HSIS TOTAL		3.35

Table 2

Intercorrelations of HSIS Category Mean Ratings and CAT Area Mean Scale Scores at Each Grade Level

	HSIS Categories					
CAT Area	Soc-Emo.	Lang. Ar.	Math.	A., M., P.E.	Par. Inv.	Total
Grade 1						
Reading	.47**	.54***	.48***	.39**	.08	.51**
Lang.	.30*	.44**	.42**	.18	-.11	.34*
Math	.41**	.47**	.51***	.31*	-.11	.44**
Battery	.48**	.57***	.57***	.34*	-.08	.52**
Grade 2						
Reading	.40**	.56***	.53***	.42**	.16	.51***
Lang.	.45**	.58***	.49***	.41**	.02	.48**
Math	.39**	.39**	.51***	.32*	-.21	.34*

(table continues)

	HSIS Categories					
CAT Area	Soc-Emo.	Lang. Ar.	Math.	A., M., P.E.	Par. Inv.	Total
Battery	.46***	.62***	.59***	.47**	.06	.55***
Grade 3						
Reading	.04	.37**	.12	.11	-.01	.17
Lang.	.01	.25	.14	.04	.01	.13
Math	.26*	.30*	.33*	.37**	.21	.51***
Battery	.13	.35*	.20	.26	.07	.33*
Grade 4						
Reading	.16	.28	.28	.07	-.01	.05
Lang.	.27	.49**	.51**	.14	.17	.27
Math	.28	.45**	.56***	.21	.02	.26
Battery	.27	.49**	.53**	.14	.07	.22

(table continues)

	HSIS Categories					
CAT Area	Soc-Emo.	Lang. Ar.	Math.	A., M., P.E.	Par. Inv.	Total
Grade 5						
Reading	.46**	.36*	-.04	.05	-.11	.29
Lang.	-.05	-.18	-.18	-.14	-.25	-.33
Math	.05	-.17	.11	-.06	-.40*	-.26
Battery	.44**	.53**	.39*	.35*	.28	.54**
Grade 6						
Reading	.46*	.68***	.37*	-.05	.26	.48*
Lang.	.37*	.48**	.28	.26	.35	.59**
Math	.57**	.53**	.61***	.35*	.46*	.71***
Battery	.54*	.65***	.50**	.21	.36	.68***

*p < .05

**p < .01

***p < .001

Table 3

Means and Standard Deviations of CAT Scale Scores for Hmong Students in Comparison to Grade Level Norms of Cat Standardization Sample

Group	N	Read.	S.D.	N	Lang.	S.D	N	Math.	S.D.	N	Total	S.D.
Grade 1												
Hmong	37	280	37.7	37	318	41.8	37	317	30.4	37	299	30.6
Norm		312	45.2		336	54.7		318	27.6		317	33.5
Grade 2												
Hmong	41	327	48.6	40	374	45.4	44	354	29.2	40	347	29.1
Norm		366	53		406	60.1		357	32.6		363	39.3
Grade 3												
Hmong	42	347	48.7	42	396	59.7	42	394	32	41	376	37.1
Norm		406	59		450	61.7		399	40.3		405	46.8

(table continues)

Grade 4												
Hmong	30	376	41.7	30	428	52.2	32	435	40.8	30	410	37.8
Norm		446	64.6		485	65.6		434	47	30	442	52.6
Grade 5												
Hmong	28	392	31.7	28	421	92.4	30	457	57.7	28	439	56.3
Norm		474	67.5		506	67.2		467	52.5		470	56.6
Grade 6												
Hmong	22	412	39.1	22	446	61.5	24	488	34.2	22	444	36.8
Norm		503	73.4		523	72.3		496	60.5		497	64.8

Table 4

Correlation of Number of ESL Hmong Students in School With Aggregated CAT Scale Score Adjusted for Grade Level

CAT Section	r
Reading	-.70**
Language	-.30
Mathematics	-.52*
Total Battery	-.31

* P < .05

** p < .002

Table 5

Analysis of Covariance of School Aggregate CAT Reading Scale Scores Grouped According to Percentage of ESL Hmong (Less Than 10%,10% to 29%, 30% or More) in School Population Adjusted for Grade Level

Source	SS	df	MS	F
Covariate	957.32	1		3.06
Between Groups	3187.24	2	1593.62	5.09*
Within Groups	3760.43	12	313.37	
Total	7904.98	15	527.00	

*p < .025

Table 6

Analysis of Covariance of School Aggregate CAT Reading Scale Scores by ESL Instructional Group Size Adjusted for Grade Level

Source	SS	df	MS	F
Covariate	1029.94	1		3.56
Between Groups	3682.46	2	1841.24	6.37*
Within Groups	3179.53	11	289.05	
Total	7891.95	14	563.71	

* $p < .015$